



SIMPAR brings together researchers and engineers from academia and industry to identify and solve critical issues in software development for autonomous robots and to boost a smooth shifting of results from simulated to real-world applications.

The conference's topics include but are not limited to, novel robotics applications driven by research, industry, and society that call for developing systems of ever-increasing complexity. In particular, these include systems with sliding autonomy, **humanoid robots**, **distributed robots**, **cognitive robotics**, and **mobile sensor networks**.

Fundamental open problems still need sound answers, and innovative and practical tools, libraries, and algorithms ready to be incorporated into new projects must adequately address the programming and development of new robotics applications. Furthermore, **simulation environments** play a prominent role in reducing large-scale systems' development time and cost. Moreover, seamless code migration from **general-purpose simulators** to real-world systems is a requirement for the future success of robotics and automation.

Topics of interest include, but are not limited to:

- 3D Robot Simulation
- Mathematical modeling of robots
- Offline simulation of robot design
- Online simulation with real-time constraints
- Reliability, Scalability, and Validation of Robot Simulation
- Learning by Demonstration
- Machine Learning for Robotics Applications
- Cognitive Robotics
- Sim-to-Real Transfer in Robotics
- Virtual and Augmented Reality for Robotics
- Middleware for Robotics
- Testing and Validation of Robotics Software

- Modeling Framework for Robots and Environments
- Simulation of Multi-robot Systems
- Human-Robot Interaction and Collaboration
- Sensor Networks for Robotics
- Large Language Models for Robotics
- Generative AI for Robotics
- Human-Centered Artificial Intelligence
- Ontologies for Autonomous Robotics
- Industrial Robotics and Digital Twins
- Design Methods and Applications
- Integrating Task and Motion Planning
- Cloud Robotics

Prospective authors are invited to submit high-quality papers representing original work. Submissions in all areas of autonomous robots, robot programming, simulation environments, and applications are welcome. All accepted papers will be hosted on IEEE Xplore as peer-reviewed archival publications.

Important Dates:

Paper submission deadline (extended): **18-Nov-2024**

Notification of acceptance: 1-Feb-2025

Final paper submission deadline: 15-Mar-2025

General Co-Chairs:

Ignazio Infantino (ICAR, National Council of Research, Italy)

Valeria Seidita (University of Palermo, Italy)

Regional Program Co-Chairs:

Americas: **Neil T. Dantam** (Colorado School of Mines, USA)

Asia/Oceania: **Changjiu Zhou** (Singapore Polytechnic, Singapore)

Europe: **Alberto Finzi** (University of Naples – Federico II, Italy)

Conference Website URL: www.simpar2025.org

Technical Co-Sponsors: